

Horizons

Houston, Texas

April 1995

Chairman's Corner

George Nield
Chairman

Like many other organizations, the AIAA Houston Section has its own Bylaws, which are intended to govern how we are organized and how we operate. In many cases however, especially in a volunteer organization, such a document may have been written many years ago, and may not necessarily reflect current procedures or policies. One of my goals for the Section this year has been to conduct a thorough review of our Bylaws and see what revisions were needed to bring them up to date.

Don Probe, our Chairman-Elect, took a first cut at it, based on a review of the latest "model bylaws" provided by AIAA Headquarters. I then suggested a few other changes, based on recent Section experience. Following a discussion at our March Council meeting, we voted to make several revisions. I'd like to summarize some of the key changes for you here. Although most of the changes were relatively minor, I think it's important to have our governing documents up to date in order to help our incoming officers get up to speed quickly on their new responsibilities and become familiar with how the Section has been operating over the last few years.

- Both the fiscal and administrative years were changed to July 1 - June 30. In recent years, the Honors & Awards Banquet in June has been the final dinner meeting of the year, with the summer time frequently devoted to planning sessions but not many formal Section activities. Having the fiscal year match the terms of office of the Council greatly simplifies preparation of the budget and audit reports.


- The Program Chairman, the Membership Chairman, and the Publications Chairman were officially designated as members of the Council. In the past, these positions have not been voting

members of the Council, even though planning our monthly dinner meetings, putting together the newsletter, and getting new members are three of the most important things we do as a Section.


- The number of Councillors was changed from "not less than four" to ten, to reflect current practice. Councillors serve two-year terms, with approximately half being elected each year. With almost 1000 members in our Section, having several Councillors makes it easier to ensure that all of our members' needs and interests are being properly represented.

- Several other minor changes were made, relating to duties of the officers, due dates of our various annual reports, and so forth.

We forwarded the proposed Bylaws revisions to André Sylvester, the Region IV Director. He will then present them to the Region and Section Activities Committee for final approval. If you would like to get a copy of the complete set of Bylaws, please let me know.

As always, if you have any questions, comments, complaints, or suggestions, I'd love to hear from you. Give me a call at (713) 483-1364, or send an e-mail note to gfield@jscprofs.nasa.gov. 

Launch Vehicle Design Course Offered


Dr. Marshall H. Kaplan, an AIAA Associate Fellow and internationally known consultant and lecturer, will be presenting a three-day short course on "Launch Vehicle Systems Design & Engineering" in Albuquerque, New Mexico, from April 19-21, 1995. Please take a look at the flyer included with this newsletter and give it your serious consideration. If you end up taking the course and you mention that you found out about it from our newsletter, the Section will receive a \$50 contribution from the course organizers. It looks like a very interesting program, and I'd encourage your participation. 

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Region IV Committee Head Needed

André Sylvester
Region IV Director

We are looking for a volunteer to head up the Region IV Associate Fellow Upgrade Committee. This individual needs to be an Associate Fellow, and needs to be able to give a presentation at the National Associate Fellow Upgrade Committee meeting in Baltimore on August 7. There will be an AIAA Guidance, Navigation, and Control Conference going on there at that time as well. If you would be interested in serving in this capacity, please give me a call at 483-1537. 

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Section Election Nominees


Don Probe
Chairman-Elect

The Nominating Committee has been hard at work, trying our best to identify some outstanding individuals to lead our Section in the year ahead. In accordance with our Section Bylaws, the Nominating Committee consisted of five members of the Section, of whom two are currently members of the Council. This year's committee members are Don Probe, Mike Begley, Carl Peterson, Sharon Castle, and Norm Chaffee. As of press time, we had come up with the following slate of candidates for the 1995-96 Section year:

Chairman-Elect:	Clay Shadeck
Vice-Chairman, Operations:	Merri Sanchez
Vice-Chairman, Technical:	Steve King
	Charlie Teixeira
Secretary:	Toby Martin
	Jeff Sugano
Treasurer:	Ed Jablonski
	Rudy Balciunas

Councillors (six positions are open this year):

Lou Livingston (second term)
Audrey Schwartz (second term)
Larry E. Bell
Dr. Elizabeth Bains
Dr. Michael Stanford
Tom Mulder
Jim Stramler
Carrington Stewart
David Portree
Dr. Jill Fabricant

Additional nominations may be made by petition to the AIAA Houston Section Secretary, P.O. Box 57524, Webster, Texas 77598. Nominations should include the name of the nominee and the office for which they are being nominated, and must be signed by at least a membership quorum (currently 50 members). Nominations must be received by April 15, 1995, in order to allow time for the ballots to be printed and distributed. 

Membership Update

J. Clayton Shadeck
Membership Chairman


Although we continue to sign up new members this year, we are still losing some as well. Most of these losses represent people who have not renewed their membership. I have sent them letters asking them to reconsider the benefits of membership. If your renewal date is coming up, please don't neglect this important action. We would miss you, and more importantly, you might miss out on some valuable opportunities for professional development and association with others in your field of interest.

As part of our membership recruitment activities, we have written to each of the new Astronaut Candidates, who reported for duty at the Johnson Space Center in early March, and invited their participation in AIAA activities.

In addition, AIAA Honorary Fellow Max Faget was kind enough to sign a "Dear Colleague" letter, which highlighted some of the advantages of AIAA membership, and which was subsequently distributed to JSC organizations. Based on the feedback we have gotten so far, we expect to pick up quite a few new members in response to these letters.


To continue to encourage your help, our member-get-a-member offer will be extended through April. This means that any member who brings in a new member will receive a certificate good for free admission to a dinner meeting of their choice. You can win as many of these as members you sign up.

In addition, our April 27 dinner meeting will be a special member-get-a-member event affiliated with the National AIAA. If individuals join at that meeting they can receive a \$10.00 discount from full membership dues. Professional members age 30 and under also receive a \$10.00 dues discount.

So thanks for all the help in recruiting members so far this season, and let's keep it going! 

Welcome New Member!

George Nield
Chairman

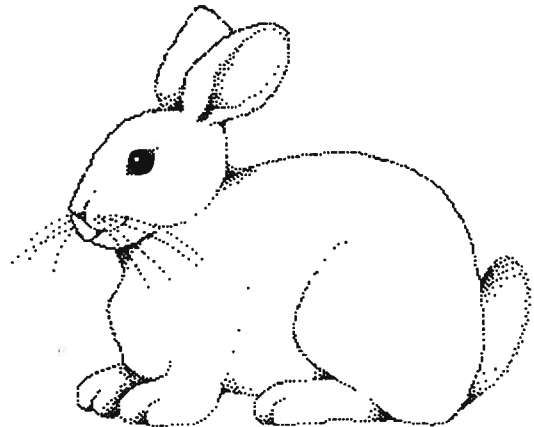
We are pleased to welcome a new member to the AIAA Houston Section: Rebecca Chaky, who is a Principal Engineer with Boeing. Based on some recent transfers into the area, and requests by several individuals for membership applications, we expect to be seeing several additional new members in the next couple of months. If you would like to know more about any of our local activities, please give one of our officers a call. We'd be happy to talk to you about upcoming events and how you can get more involved in Section events. 

Houston Section on World Wide Web

George Nield
Chairman

For those of you who have access to the World Wide Web part of the Internet, check out the AIAA Houston Section Home Page. Our URL is:

http://www.jsc.nasa.gov/AIAA/AIAA_Home.html 



Events

Sixth Space Logistics Symposium

Steve Zobal
SSLS Co-Chair

The Sixth Space Logistics Symposium was held February 21-24, 1995, at the South Shore Harbour Resort & Conference Center. The symposium was sponsored jointly by the AIAA and the Society of Logistics Engineers (SOLE), with the AIAA Houston Section as the lead host organization.


Tuesday's agenda included a morning Space Logistics Workshop conducted by Dr. Benjamin Obrovsky of the University of Houston, judging of the Lunar-Mars Exploration Challenge exhibits from area middle school teams, and a no-host dinner for out-of-town space logisticians and invited guests from the local aerospace community.

On Wednesday morning, Dr. Carolyn Huntoon, JSC Director, opened the plenary session with the welcoming address. She was followed by keynote speakers Jerry Cobb, Director, Lockheed Missiles & Space Co.; Randy Brinkley, Space Station Program Manager, NASA; Doug Stone, Vice President, Space Station Program, Missiles & Space Division, Boeing Defense & Space Group; and Dr. Ken Cox, Assistant to the Director, Engineering, JSC. The symposium theme, "Integrating Space Logistics in the Future—Working Smarter with Fewer Resources," set the tone for the plenary session and the following technical sessions. Space Center Houston was the site for Wednesday's after-hours activities, including an informal reception, a slide presentation by the Confederate Air Force, and dinner.

The three-track technical sessions were completed late Thursday afternoon. A reception preceded the Awards Banquet at South Shore Harbour that evening. The guest speaker was General Jay W. Kelley, USAF, Commander, Air University and Director of Education, Air Education and Training Command. General Kelley shared with us some strategic thinking from the Air Force perspective in the post-cold war era. He referred to a study


conducted at the Air Command and Staff College and the Air War College at Maxwell AFB during the 1993-94 academic year that centered on generating a vision of the military space capabilities our country would require in the far future and identifying the enabling technologies. The ten-month effort became known as SPACECAST 2020 and was described in more detail the next day by Colonel Richard Szanfranski.

Friday morning's plenary session included the SPACECAST 2020 presentation, A Hubble Space Telescope Repair Mission presentation/video and an astronaut round-table discussion on Working Together in Space. The three participating astronauts were Bob Overmyer and two astronauts-in-training at JSC, a Canadian and a Japanese.

Although attendance was lower than anticipated, the technical sessions and plenary speakers accomplished the goal of focusing on and addressing relevant space logistics issues and solutions. This was the first national symposium managed by the Houston Section without Headquarters support, and it demonstrated that with the dedicated support of Section members and the local community, we can successfully sponsor this kind of symposium. 

Life Sciences Lunch & Learn

Mike Begley

Dr. Michael Stanford, professor in the UTMD department of radiology, made an exciting presentation to a small crowd at a March 27 Lunch & Learn. He combined his expertise in the implications of space radiation on human spacefarers with the exploration blueprint developed in response to President Bush's 1989 speech mandating a Space Exploration Initiative (SEI). He presented an overview of space radiation sources, exposure limits, and typical exposure levels for the required SEI mission profiles, then lead into the mission scenarios. It was energizing to hear Dr. Stanford's compelling vision for future Lunar and Mars exploration. 

Crossword

Constellations, mostly

ACROSS

1. The Centaur
4. The Water-Snake
8. The Great Dog
10. The Altar
13. Sign
14. The Little Horse
15. The Serpent
17. The Little Bear
19. The Scorpion
22. Father of 9 Down
24. Argo, formerly
25. Covet
27. The Winged Horse
29. Employ again
30. Legendary strong man
32. The Goat
34. The Bird of Paradise
35. The Eagle
36. The Swan
38. Less than a byte
39. The Ship's Sail
40. The Twins
43. The Hunter
45. The Scales
47. Canary's vocalization
49. It accompanies the choir
51. Norma, the —
52. The Sea Serpent
53. Son of Zeus and Alcmene
55. The Air Pump
56. Negative
57. The Bull
58. The Herdsman
59. He saved 9 Down

DOWN

2. Behold
3. The Ram

4. Lepus, the —

5. The Table

6. Crux, the —

7. The Crane

9. The Chained Lady

11. The Water Bearer

12. Family

16. The Fishes

18. The Serpent Bearer

19. The Archer

20. The Peacock

21. It sank the Titanic

23. The Ship's Stern

26. The Great Bear

28. The Charioteer

31. What stars and planets do

32. Mother of 9 Down

33. Not bad

36. The Ship's Keel

37. The Unicorn

39. The Virgin

41. The River

42. The Crab

44. The Indian

46. The Dragon

48. The Lyre

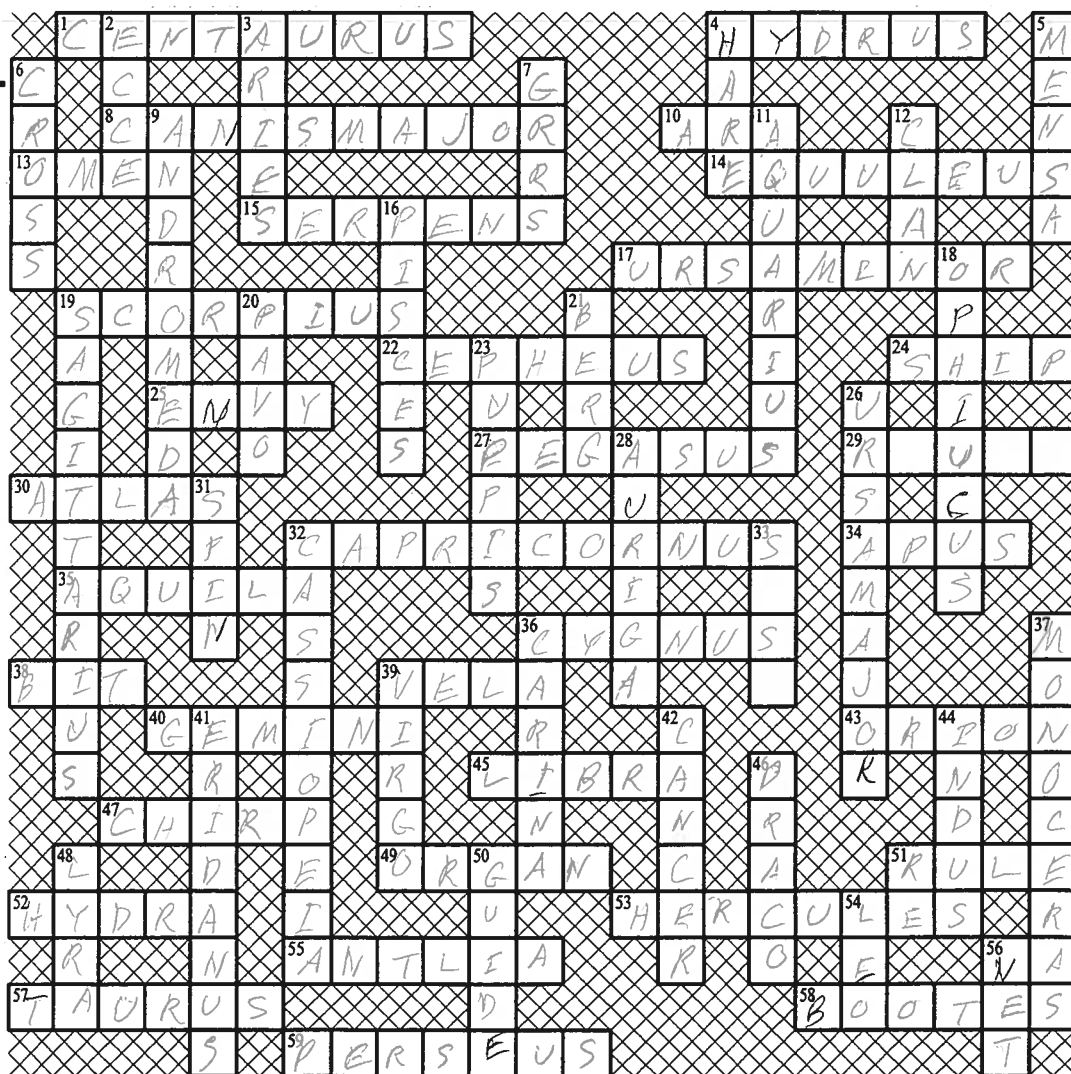
50. Steer

51. Concerning

54. The Lion

56. Reticulum, the —

(Solution on page 11.)



AIAA Space Transportation Technical Committee Meeting

Charles Teixeira
Space Transportation TC Chairman

The AIAA Space Transportation Technical Committee (ST-TC) held its winter meeting on February 23-24 at AIAA Headquarters in Washington, D.C. The winter meeting differs from other meetings during the year in that representatives from various government agencies are invited to speak on transportation issues that are current and not necessarily technical. The following is a brief summary of the presentations and discussions.

Mr. Michael Mott, NASA Deputy Administrator (Technical) discussed the many changes being considered and his belief that we need to get away from the "I" philosophy and wear the big "N" (NASA) hat. He projected a NASA budget of \$13.2 B in 1999 and stated that the Reusable Launch Vehicle (RLV) is the agency's #1 new start priority. He discussed the objectives of the RLV program as being the determination of the appropriate technologies to be developed which will result in lower transportation costs.

He acknowledged that the NASA Advisory Council recommended a two stage approach and said he did not know what the final concept would turn out to be. The consensus was that Soyuz would be difficult to modify and that the Administrator is convinced we can't get there (phase two rescue vehicle) from here and that consequently the long term rescue vehicle solution would not be Soyuz based but would be a U.S. or U.S./Europe solution.

Mr. Dennis Granato, DOD Space and Strategic Systems, said the DOD reorganization now underway is being driven by congressional criticism that there is no focal point for management and acquisition of DOD space systems. He said DOD's expendable launch vehicle program (EELV) is the first in 6-8 years that was agreed to by all factions in DOD; it is affordable and within their budget projections, but is not a clean sheet approach or the final answer. DOD is waiting to see what comes out

of the RLV program, admits their Titan IV costs are "eating them alive," and are planning to delay their Titan IV replacement decision until ~2000, the same time the RLV and Shuttle replacement decision is expected.

Questioned about DOD policy on use of foreign hardware, he said official policy was due in two to three weeks and expected it to allow use of foreign hardware with the caveat that there be no dependency on said hardware, and that the company be "under DOD control," i.e. hardware be contracted through a U.S. prime contractor.

Mr. Dennis Smith (substituting for S. Isakowitz), OMB, said the FY96 budget was not dead on arrival, contrary to what is stated in the press and that OMB is concerned about projected reductions in DDT&E and operations costs attributed to proposed new systems. He said 1996 RLV decision will be based on demonstrated cost reductions. He asked "What are the technologies needed to achieve significant cost reductions?" OMB does not assume the RLV concept is a Single Stage To Orbit (SSTO), but a technology program to achieve lower cost. NASA has action to define criteria to be used for 1996 decision.

OMB believes there is a conflict in the requirements between NASA's ISSA based requirements and the commercial, lower end requirements. He ended with the question, and challenge, "How does the RLV program demonstrate achievement of the cost reduction goals?"

Ms. Shana Dale, staffer on Sensenbrenner's House Science Committee, stated that their next hearing is set for March 13 with a goal to have an authorization bill out by Easter, a much faster track than previous years. Goldin's downsizing plan is due by May, but hoped for earlier as the budget will be determined before May. The 1997/1998 time period is when major restructuring will take place. The Committee believes RLV is essential to recapturing market share and competitive edge, and that the committee is receptive to multiyear authorizations for NASA.

(see TRANSPORTATION, page 7)

TRANSPORTATION (from page 6)

Mr. Richard Dalbello, Office of Space Technology Policy, expressed his view that industry has not helped development of new launch systems with \$1.98 cost estimates. The RLV program is not totally responsive to congressional intent which was to develop technology at the "tens of million dollars" level. Furthermore, the system must be commercially viable. SSTO was not specified, nor was reusability. Lots of discussion took place on ISSA driven requirements vs. commercial sector needs.

Mr. Donald Phillips, USTR, addressed their efforts at working international trade negotiations and assessing impacts on U.S. launch industry. Currently there are no guidelines for LEO traffic; guidelines do exist for GEO traffic where Russia is licensed for 8 launches between 1994 and 2001, and China for 11 launches.

Mr. Bob Williams, DOT, Office of Commercial Space Transportation (OCST), discussed their responsibility for certification of all transportation systems (including space). The 1988 regulations are being updated and work is progressing on several new spaceports being proposed in Florida, Alaska, and Hawaii. He believes that OCST will be merged with the FAA and will evolve into an FAA for space (Federal Aerospace Administration?). OCST's jurisdiction applies to all commercial launches (and entry if applicable) provided by U.S. companies, even if on foreign soil (e.g., Pegasus launch out of Spain). He appealed to industry representatives on the ST-TC to help write the licensing and certification regulations.

The remaining summary is of the general ST-TC business meeting on items that might be of general interest.

Karen Poniatowski (Program Manager for new ELV programs, NASA Headquarters) will be the new chairperson for the coming year.

Discussion and agreement to reduce number of ST-TC meetings from four to three per year due to the travel budget situation.

The Space Programs Conference at Huntsville in the fall will remain the ST-TC's sponsored conference.

AIAA Headquarters proposed the ST-TC sponsor an international transportation conference every year addressing policy/programmatic issues rather than technical. Response was mixed and the committee agreed to consider the proposal.

The Education and Publications Subcommittee published 1994 highlights in *Aerospace America* and produced a video on "Space Transportation—Past, Present, and Future" (available, see me if you want to borrow a copy for a class, talk at a school, etc.). A textbook on Launch Vehicle Design and Engineering is well under way; edited by M. Kaplan, it will be part of the AIAA Progress Series. The International Reference Guide to Space Launch Systems, 1995 Edition, is nearing completion.

It was a very informative meeting and plans are underway for the summer meeting, location TBD. **H**

Micro-Nanotechnology Conference Planned

**George Nield
Chairman**

A major national conference on the space applications of micro- and nanotechnology is being planned for the Houston area on October 30 - November 3, 1995. The event will be conducted at the South Shore Harbour Resort and Conference Center and is being co-sponsored by NASA, the Aerospace Corporation, and the AIAA Houston Section. We'll keep you posted on additional details as they become available. **H**

February Dinner Meeting

Richard A. Lehman

On Thursday, February 16, 1995, I was privileged to experience a bit of U.S. and world space history from a person who has been a major team participant. I attended the February AIAA meeting (see DINNER, page 8)


DINNER (from page 7)

where Gene Kranz was the dinner speaker. Mr. Kranz gave a personal historical account of the space program through his personal stories and slides. After the program was over, I realized that I was privileged to see pictures and hear stories about the space program that no one else in the general public had ever seen or heard before.

One such story was about a Gemini mission with Gene Cernan. Mr. Kranz described how Gene Cernan accidentally ripped his space suit during an EVA. I remember watching all of the Gemini missions on TV in the sixties, but I don't remember the special details of how dangerous the early manned space flight were. This is an example of the drama that Mr. Kranz was able to describe to us that evening.

I asked Mr. Kranz, what are the attributes necessary for leadership? His answer was the ability to focus: the ability to focus people in the right direction, doing the right things. He said that three things are necessary for good leadership:

1. Placing a dream in people (the space program to the moon)
2. Find a working vehicle for people that you lead to work on (mandate to the moon).
3. Work the vehicle every day (Apollo Mission).

When he was asked what the U.S. should do about developing a cheap, dependable launch vehicle, he stated that JSC should develop a skunk works to produce a low cost effective launch vehicle which would use the knowledge of Shuttle. He said that we have the skills and the technology right here at JSC in Houston to accomplish this task. This implies to me that all we are lacking is the direction to make it so. Remember, the mission to get us to the Moon was accomplished with continuous and effective leadership. We had a goal, the leaders, the skills, the resources, and most important, we had the support of the general public. Mr. Kranz reminded us that this was during the 60s, one of the most troubled times in recent American history, and we still accomplished major technological goals. 



Gene Kranz, former head of JSC's Mission Operations Directorate, was the guest speaker at the February dinner meeting. His presentation, "35 Years of Manned Space Flight," provided a fascinating look at the history of America's manned space program.

Cranium Cruncher

Lou Livingston
Editor

February Cruncher

Correct solutions to the February Cruncher were received from Carl Scott and Frank Baiamonte. The coin toss was won by Frank Baiamonte, who gets the free dinner at an upcoming meeting. Congratulations, and keep those solutions coming.

March Cruncher

A farmer with nine sons had a farm in the shape of a square. When he died, his will specified that his farm was to be divided so that Alf, the eldest son, had the largest portion. The next four, Bud, Cal, Deke and Ed, each were to have half as much as Alf, and the last four, Frank, Gus, Hank and Irv, were to have half as much as Bud, Cal, Deke and Ed. The catch was that there must be nine squares, not counting the original square of the whole field, or the entire farm was to go to the SPEBQSA. How can they divide the property to meet these conditions?

(see CRUNCHER, page 9)

CRUNCHER (from page 8)

March Solution

Joe Frisbee and Chris Varner found the most symmetrical solution; the nine squares are ABFE, CDGH, IJMN, KLPO, FGKJ, ACKI, BDLJ, EGOM and FHPN.

A	B	C	D
Frank	Bud	Gus	
E	F	G	H
Cal	Alf	Doc	
I	J	K	L
Hank	Ed	Irv	
M	N	O	P

Sarah Kirby had nine squares ABJI, EFNH, IJPO, BCGF, FGKJ, CDHG, GHLK, BDLJ, and JLQP.

A	B	C	D
Bud	Frank	Gus	
E	F	G	H
Cal	Hank	Irv	
I	J	K	L
Doc		Alf	
M	N		
Ed			
O	P	Q	

In E. G. Strong's solution, the squares are easier to count but the areas aren't as simple.

A	B	C
Bud	Cal	
D	E	F
Frank	Gus	
G	H	I
Hank	Irv	
J	K	L
M	N	O
Alf	Doc	
Q	R	
S	T	Ed
U		

Finally, Frank Baiamonte went us one better and found a solution with ten squares: ACKI, BDLJ, CEMK, FHON, KLRQ, CDGF, DEHG, FGLK, GHML and IKQP.

A	B	C	D	E
Bud	Cal	Frank	Gus	
F	G	H		
I	J	K	Hank	Irv
L	M			
Alf	N	Doc	O	
P	Q	Ed	R	

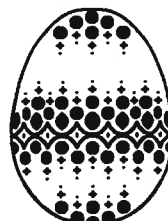
And out of the hat comes E. G. Strong as the winner of the free dinner. Congratulations to him, and thanks to all our entrants!

April Cruncher

For a change, here's a guest Cruncher, suggested by Hank Johansson:

There are twelve coins. Eleven are genuine; one is counterfeit but can be identified only by weight. Using only three weighings on a balance (not a scale) and no weights other than the twelve coins, identify the counterfeit and determine whether it is heavier or lighter than the other eleven. Hint: you need to use *all* the evidence from each weighing.

Send your solutions to Michael Begley, Dynacs/HS-30, or by e-mail to louliv@aol.com by April 28. Since our publication schedule is out of whack again this month, correct solutions will be announced in the June *Horizons*.



AIAA Calendar

The AIAA Calendar is intended to encompass all Houston Section events and significant dates. This includes Executive Council meetings, which are open to interested members, and *Horizons* deadlines. It will also include committee meetings, Lunch & Learns and similar events if *Horizons* hears about them in time for inclusion. Please send pertinent details to Mike Begley, Dynacs/HS-30, or to Lou Livingston, 1911 Pepper Hill, Houston, TX 77058.

13 January - 2 May

The Clementine Collection: Photographs from the recent Clementine mission.
Space Center Houston.
Information: Jennifer Casey, 244-2133.

April

6-8 - Thursday-Saturday

AIAA Southwestern Region Student Paper Conference - Sponsored by AIAA Houston Section and Texas A&M Student Chapter.
College Station Ramada Inn.
Information: Tom Mulder, 244-4428.

7 - Friday

LPI Seminar.
"How Thick is the Martian Lithosphere?," Dr. Walter Kiefer, LPI.
Center for Advanced Space Studies, 3:00 PM.

10 - Monday

Abstracts due for the Houston Section Annual Technical Symposium, to be held May 19.
Information: Kam Lulla, 483-5159.

13 - Thursday

Automation and Robotics Committee's "Workshop on Automation and Robotics '95"
Center for Advanced Space Studies.
Information: Zafar Taqvi, 244-8662.

20 - Thursday

AIAA Executive Council meeting.
Center for Advanced Space Studies, 5 PM.

21 - Friday

Tour of the NASA Virtual Reality Lab. Attendance is limited to 15 people.
Building 9N, Room 2114, 11:30 AM.
Information: Dave Homan, 483-8089.
Reservations: Michael Begley, 244-8471.

24 - Monday

May *Horizons* inputs due.
Michael Begley, 244-8471.

27 - Thursday

AIAA Monthly dinner meeting.
Program TBD.
Gilruth Center, 5:30/6:30/7:30.

May

18 - Thursday

AIAA Executive Council meeting.
Center for Advanced Space Studies, 5 PM.

19 - Friday

AIAA Houston Section Annual Technical Symposium Center for Advanced Space Studies, 8:30 AM to 4:30 PM. Call Dr. Kam Lulla at 483-5159 for more information.

22 - Monday

June *Horizons* inputs due.
Michael Begley, 244-8471.

25 - Thursday

Monthly dinner meeting.
Program TBD.
Gilruth Center, 5:30/6:30/7:30.

June

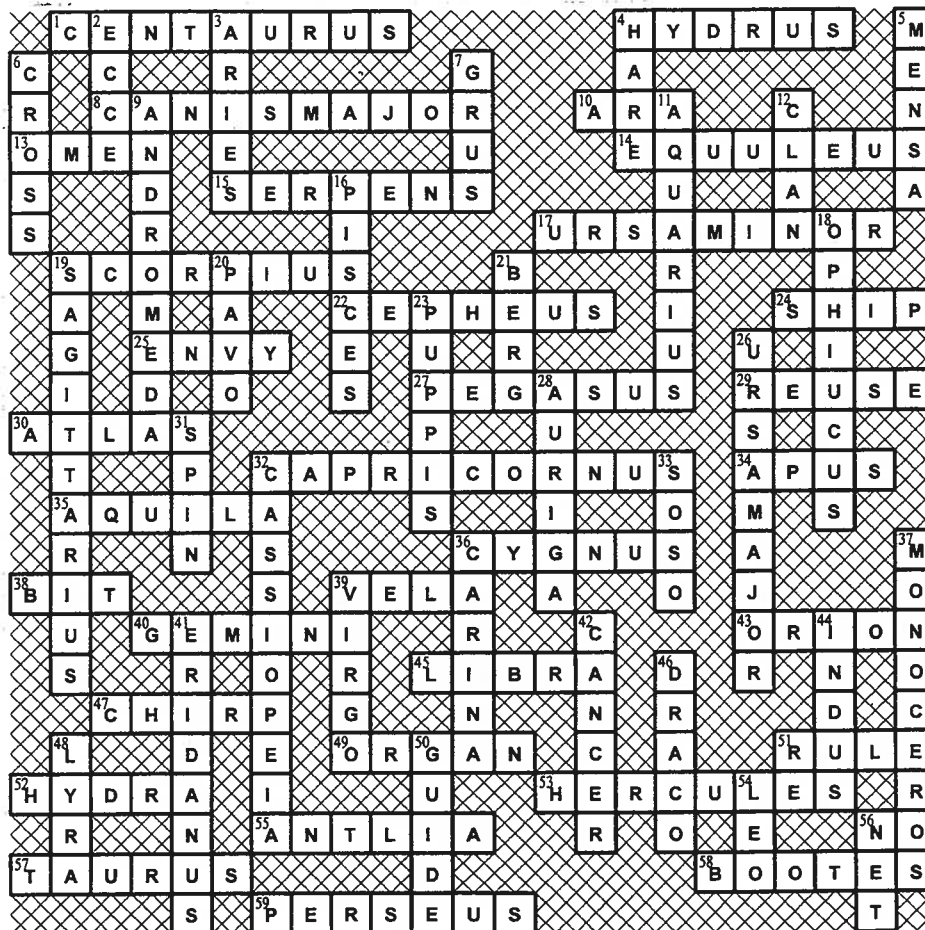
15 - Thursday

Executive Council meeting,
Center for Advanced Space Studies, 5 PM.

22 - Thursday

Monthly dinner meeting,
Program TBD.
Gilruth Center, 5:30/6:30/7:30.

Crossword Solution:

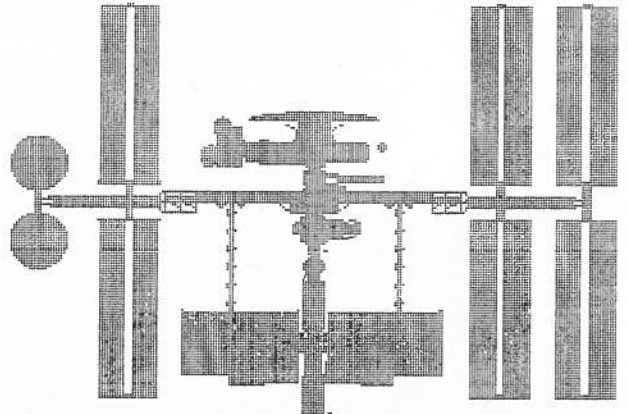
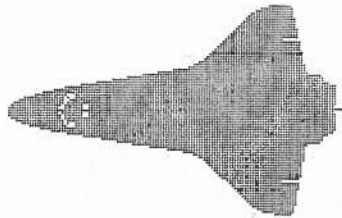
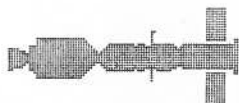
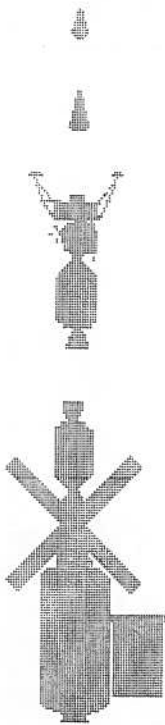




Horizons

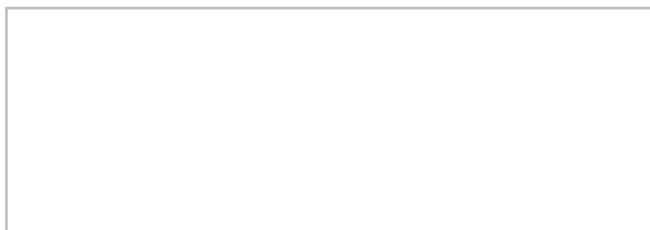
The mission of the Houston Section of the AIAA is to promote the advancement of the aerospace profession, with special emphasis on the following tasks:

- To provide the membership with opportunities for continuing education, professional growth, and recognition for their accomplishments.
- To stimulate the exchange of information within the scientific and technical community.
- To provide support and encouragement for students in learning mathematics, science, and engineering.
- To assist the general public in understanding the benefits of aerospace systems and technology.



AIAA Houston Section
P. O. Box 57524
Webster, TX 77598

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GEORGE NIELD
CHAIRMAN 1994-95

American Institute of Aeronautics and Astronautics

HOUSTON SECTION P.O. BOX 57524 WEBSTER, TEXAS 77598

Thursday, April 27, 1995

SPACE CENTER HOUSTON

RICHARD E. ALLEN, Jr.
General Manager ,
Space Center Houston



ROBERT R. GILRUTH RECREATION CENTER
JOHNSON SPACE CENTER

PRESENTER

Richard Allen assumed the dual position of President of the Manned Space Flight Education Foundation, Inc. and General Manager of Space Center Houston in January 1995. Mr. Allen brings to the Center a successful 27 year background in the attractions/museum industry. Prior to joining Space Center Houston, he served as General Manager for the U.S. Space and Rocket Center - Home of the U.S. Space Camp, a space museum and education center in Huntsville, Alabama. He accepted that position in 1991 after more than 20 years with the Six Flags Corporation where he held numerous management positions, including Vice President and General Manager of Six Flags Atlanta, Director of Operations for the Six Flags Amusement Centers, Manager of Operations at Six Flags Great Adventure, Director of Administration at Six Flags Over Georgia and Six Flags Over Texas, and Corporate Director of Special Projects.

As General Manager of Space Center Houston, Mr. Allen has overall responsibility for all business aspects of the day-to-day operations, which include maintaining high standards of quality in the shows, exhibits, programs, food services, and merchandise presented to the Center's guests and the general public; directing educational, fundraising and marketing efforts; strategic planning for future development; and community relations.

Mr. Allen graduated from West Georgia College in 1971 with a Bachelor of Arts in Business Administration. He and his wife, Lori, and their three boys, reside in the Clear Lake area.

DINNER MEETING

SOCIAL: 5:30
DINNER: 6:30
PROGRAM: 7:30

MENU: BAKED CHICKEN

MEMBERS & SPOUSES	\$10.00
NONMEMBERS	\$11.00
STUDENTS/YOUNG MEMBERS	\$ 5.00
UNEMPLOYED MEMBERS	\$ 5.00

TANYA BRYANT
483-1175
NASA

SARAH LEGGIO FOLLETT
282-3160
ALLIEDSIGNAL

CALL ONE OF THE ABOVE FOR RESERVATIONS.

NOTE: RESERVATION DEADLINE IS MONDAY, APRIL 24, AT NOON.

ANY CANCELLATIONS ARE REQUIRED PRIOR TO DEADLINE. NO-SHOWS WILL BE BILLED.

ALL ARE WELCOME

DINNER RESERVATIONS ARE NOT REQUIRED FOR ATTENDING THE PROGRAM ONLY.

Launch Vehicle Systems Design & Engineering

A Three-Day Presentation Focused On
Current Developments In The Launch Vehicle Industry
Enrollment Limited, Register Early!

What You Will Learn:

- Key launch vehicle "rules of thumb" and "sanity" checks.
- Fundamental performance tradeoffs for users and designers.
- Launch vehicle selection processes and criteria.
- Design impacts of the launch environment on payloads.
- How launchers stack up on a cost-per-pound comparison basis.
- Fundamental design drivers for expendable and reusable systems.
- Launch vehicle subsystems and their important interactions.
- Launcher trends including the new NASA reusable vehicles.

NOTE: If, when you register for this course, you mention that you read about it in the Houston Section newsletter, the Section will get a \$50 contribution from the session organizers.

April 19-21, 1995

Albuquerque, New Mexico • Radisson Inn-Airport
1901 University SE
Albuquerque, New Mexico
(505) 247-0512

8:30 am - 4:00 pm

Tuition: \$990

Summary

This seminar is the only one to offer a detailed look at launch vehicles, design and engineering requirements that go into them, insight into limitations and opportunities for the future. All launch vehicle types are included, with emphasis on the highly volatile small-satellite launcher industry and new reusable system concepts. You will get a realistic comparison of the newest contenders, including Orbital Sciences' Pegasus-XL and Taurus, Lockheed's LLV, Zenit-3, Ariane-5 and others. The discussion addresses what is real and what is not.

You will be exposed to current developments throughout the launch vehicle world and given a survey of the international inventory of large and small launcher systems. You will be briefed on the Proton, Zenit, Energia, Ariane, Long March, H-2, Atlas, Delta, Titan, Space Shuttle, and emerging single-stage-to-orbit and other re-usable concepts. Numerous case studies and examples are used to illustrate important aspects for users and designers. The discussion includes projections for the next several years. Important relationships among subsystems, stages, propulsion, and maneuvering are explained.

Instructor

Marshall H. Kaplan, Ph.D., directs Civil and Commercial Space activities at Veda Incorporated in Alexandria, Virginia. Dr. Kaplan is a specialist in the development of new launch vehicles and space flight concepts and programs. He is presently the Chief Engineer on a fully reusable launcher system in its early stages of development. Prior to this he served as the Chief Engineer



of the Conestoga Launch Vehicle family. Dr. Kaplan is also a co-inventor of a new mobile, small expendable launch system for military applications, and he is involved in a number of other new booster concept developments. Your seminar leader has over 30 years of academic and industrial experience with launch vehicles, satellites, and space technologies. He was a Professor of Aerospace Engineering at the Pennsylvania State University and the Director of a Space Research Institute.

Dr. Kaplan enjoys an international reputation as an expert and lecturer in aerospace vehicle design, dynamics and control. In addition to publishing some 75 papers, reports, and articles on aerospace technologies, he is the author of several books, including the text, "Modern Spacecraft Dynamics and Control." Dr. Kaplan holds advanced degrees from MIT and Stanford University. In addition to this seminar, he teaches a number of other professional development courses each year in the U.S. and Europe.

For Immediate Registration Phone (410) 531-6034 or Mail Check or Purchase Order to
Applied Technology Institute, 12960 Linden Church Road, P. O. Box 616, Clarksville, MD 21029
Fax (410) 531-1013

Announcement & Call For Abstracts

The University of Houston - Clear Lake
The Institute of Electrical and Electronics Engineers - Galveston Bay Section
The University of Houston - Clear Lake IEEE Student Branch
The Instrument Society of America - Clear Lake Section
present

JAIPCC '95 Symposium

Friday, April 28, 1995

University of Houston - Clear Lake

Joint Applications in Instrumentation, Process, and Computer Control

Theme: Technology in a Changing World

Topics include, but not limited to:

Advanced Control Systems - fuzzy systems, industrial control systems; Design Environments/Tools - strategic visualization, rapid prototyping, virtual teams, process improvement; Communications—networks, Internet utilization, nomadic systems; Simulation; Sensor Technology; Remote Sensing; Integrated Vehicle Health Maintenance; Integrated Product Development Teams; Intelligent Systems

**Authors are asked to submit an *Abstract* (250 words or less)
by Monday, April 10, 1995. *Abstracts* will be published.**

Mail abstracts to:

Kent Byerly

Lockheed Engineering and Sciences Company

2400 NASA Road 1, Mail Code C02

Houston, Texas 77058

**(If possible, include soft copy on 3.5" diskette in Microsoft Word (PC/MAC) or ASCII format)
or send by Internet to byerly@tcd.jsc.nasa.gov, or by FAX to 333-7072**

**For more conference information contact
JAIPCC '95 Chairman, Wade Webster
713-488-1318**

**Reminder: NASA/JSC sponsored research will require NASA Form 427 and/or 548.
Expedited Approvals are Being Sought**



CLEAR LAKE SECTION



GALVESTON BAY SECTION



Registration

The University of Houston - Clear Lake
The Institute of Electrical and Electronics Engineers - Galveston Bay Section
The University of Houston - Clear Lake IEEE Student Branch
The Instrument Society of America - Clear Lake Section
present

JAIPCC '95 Symposium *Joint Applications in Instrumentation, Process, and Computer Control* *Luncheon Speaker (12 noon - 1:30 p.m.)*

Dr. Frank Tittel

Chairman of the Department of Electrical & Computer Engineering - Rice University

Theme: Technology in a Changing World

Parallel Technical Sessions (9:00 a.m. - 12 noon & 1:30 p.m. - 4:30 p.m.):

Advanced Control Systems - fuzzy systems, industrial control systems; Design Environments/Tools - strategic visualization, rapid prototyping, virtual teams, process improvement; Communications--networks, Internet utilization, nomadic systems; Simulation; Sensor Technology; Remote Sensing; Integrated Vehicle Health Maintenance; Integrated Product Development Teams; Intelligent Systems

Friday, April 28, 1995
University of Houston - Clear Lake
2700 Bay Area Blvd.
Houston, TX 77058

JAIPCC '95 Symposium Registration Form Due by COB April 24, 1995

Name: _____ Date: _____
Company Affiliation: _____ Tel. No.: _____
US Mail Address: _____
Check here if you are a FULL TIME Student: _____

Advanced Registration Fee

Full Conference (includes lunch):	\$20.00 (There is a \$5.00 discount for speakers - \$15.00 Full Conference)
Conference Only (Registration at the door)	\$20.00 (No lunch provided. \$5.00 for luncheon at door if seating is available)
Luncheon Fee for Full Time Students	\$ 5.00 (No registration fee for Full Time students)
Amount Enclosed:	\$ _____

Please make checks payable to: JAIPCC
Mail to: Bill Weber
411 Cole Ave.
Webster, TX 77598

For more information, call Wade Webster (713) 488-1318.



CLEAR LAKE SECTION



GALVESTON BAY SECTION



**AUTOMATION AND ROBOTICS TECHNICAL COMMITTEE OF
AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS
HOUSTON SECTION**

**in cooperation with
AIAA National Committee on Space Robotics and
AUTOMATION, ROBOTICS and SIMULATION DIVISION, NASA/JSC
PRESENT**

WAR '95

**CENTER FOR ADVANCE SPACE STUDIES (CASS/LPI)
Thursday, APRIL 13, 1995**

THEME: SELF ORGANIZING ROBOTS

8:00-8:30 AM	Registration
8:30 AM	Welcome
	<i>Dr. Zafar Taqvi</i> , Chairman
	A&R Technical Committee, AIAA
	<i>Dr. George Nield</i>
	Section Chair, AIAA
	<i>Charles R. Price</i> ,
	Automation & Robotics Division, JSC

PRESENTATIONS:

***Dr. Gerald P. Roston "A Genetic Methodology for Configuration Design"**
Cybernet System Corp.

***Dr. David P. Miller " Topic to be announced later"**
Mitre Corp.

***Dr. Mark W. Tilden " Nervous Networks and the Evolution of Living
Robobiologist, Machines"**
Los Alamos National Lab

12: 00 Noon	Luncheon (Cost \$7, advance registration needed)
	Speaker and Topic will be announced later

WORKSHOP IS FREE BUT REGISTRATION IS REQUIRED

**For registration and luncheon,
please contact Debra Brown of Dynacs Engineering at 333-8509 by noon, Monday April 10, 1995.
For general information on workshop,
please contact Dr. Zafar Taqvi A&R TC Chairman at 244-8662**



CALL FOR PAPERS



Deadline for Abstracts extended...

AIAA Houston Section Annual Technical Symposium

**At the Center for Advanced Space Studies (LPI)
May 19, 1995
8.30 a.m. to 4.30 p.m.**

You are invited to submit one-page abstracts for the upcoming technical symposium by April 10, 1995 (new deadline).

The focus of this symposium is International Space Station Alpha (ISSA) and some sessions will be devoted to the ISSA related topics but other topics will also be discussed in selected general sessions. Abstracts will not be published this year. We will attempt to facilitate electronic exchange of abstracts. For more information, call Dr. Lulla at 483-5159.

Please include the following information:

Title:

Author/s:

Affiliation:

Text (400 words or less):

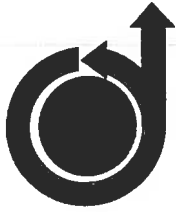
Keywords:

Send your Abstracts to:

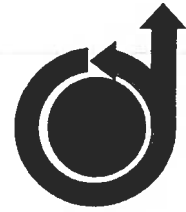
Dr Kamlesh Lulla

Vice-Chairman (Technical)

SN5, NASA/JSC, Houston, Texas 77058



The AIAA is pleased to present



A Tour of the Virtual Reality Laboratory

Friday, April 21, 11:30 am

**AIAA members and non-members are invited,
but NASA badges are required.**

**The tour will be hosted by Dave Homan of NASA.
For more information, call Dave at 483-8089.
Meet in NASA Building 9N, Room 2114.**

**Attendance is limited to 15 people.
Call Michael Begley, 244-8471, to confirm your reservation.**